Calibration of CCD cameras for computer aided surgery

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A navigation system is planned and implemented in order to use it in computer aided surgery. The idea is that three cameras are collecting images of the same object and from these projections the 3D coordinates of the points can be computed. In order to perform such a positioning we have to solve the calibration of the cameras. The calibration needs a special object, called calibration cross. The images of the calibrated cameras can be used later for determining point positions.

A calibration program has been developed which is able to the determined the precision of the calibrated Navigation System. Several test experiment have been performed in order to check the positioning of the system.

The experimental result shows that the positions of 3D points can be determined with an error cca. 0.3 cm. We work further for improving this result.

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